

**COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF ENVIRONMENTAL PROTECTION
Comments on Proposed Rule:
Establishment of Electronic Reporting; Electronic Records
Docket Number EC-2000-007**

GENERAL COMMENTS

To be successful, an electronic reporting system must incorporate the following components:

- (a) Simplicity:** Each level of complexity increases the possibility of human error and incompatibility in hardware and software;
- (b) Reliability:** The system must have adequate safeguards that are routinely implemented, monitored, and audited;
- (c) Technological neutrality:** The system must accommodate a variety of existing technologies, as well as developing technologies.

The proposed rule, by contrast, presents a complex process for identifying the sender, verifying the transmission, and archiving the transaction. The complexity makes the process difficult to implement and increases the likelihood that many steps will be circumvented

Although purporting to be technologically neutral, the detailed identification and verification requirements can only be met by one technology, PKI. The archiving requirements, unfortunately, cannot be met by any technology, because there is no known process for the long-term storage of encrypted documents.

The result is a set of proscriptive procedures that impede electronic reporting. A better approach would be to create general standards that could be met in a variety of ways.

The general standards approach is taken by the Federal Rules of Evidence in defining a business record. There is no proscriptive list of procedures for recording or maintaining the record. Instead, the document can be admitted into evidence if it is “made at or near the time” of the transaction, “by a person with knowledge,” “in the course of a regularly conducted business activity” and in a trustworthy manner. These general standards can be met in a variety of ways, yet the federal courts have found them adequate for decades.

SPECIFIC COMMENTS
[EPA Language in Italics]

Preamble

B. What Will the Proposed Regulations Do?

Pennsylvania Comment:

Stay as non-proprietary and commercially oriented as possible. Use only thin client technologies. The mention of PKI, XML, EDI and Web technologies are positive, especially with the indication that there will be openness to new, emerging technologies

D. What Is EPA's Approach to Electronic Record-Keeping?

Today's proposal sets forth the criteria under which the Agency considers electronic records to be trustworthy, reliable, and generally equivalent to paper records in satisfying regulatory requirements. The intended effect of this proposed rule is to permit use of electronic technologies in a manner that is consistent with EPA's overall mission and that preserves the integrity of the Agency's enforcement activities.

Pennsylvania Comment:

It is important that EPA determine the process by which their paper records are actually handled and if that process meets their needs. If the paper process does not meet their needs, emphasis should be placed on establishing acceptable processes before electronic tools are introduced. Additionally, electronic tools should not be used to over-engineer the process merely because they are available. The selected tools should be appropriate to the application.

E. What Information Is EPA Seeking About Electronic Reporting and Record-Keeping Proposals?

*EPA is seeking **comment** and information on how well today's proposed regulatory provisions and the associated Central Data Exchange infrastructure will serve to fulfill these three goals. Concerning the first--addressing cost and burden--EPA is particularly interested in and seeks **comment** on whether today's proposal will make electronic reporting and record-keeping a practical and attractive option for smaller regulated entities, especially small businesses.*

Pennsylvania Comment:

PKI is an obvious choice for the third goal but it has yet to gain a significant foothold among the general public. Significant outreach will be necessary to make this a reality. In relation to the first goal, Web-based systems do not represent an onerous burden but the cost of a PKI certificate may. Decisions have to be made regarding how the cost will be handled, shared, etc.

*Concerning the second--addressing the data and the associated business process--we are especially interested in **comments** on how our proposed approach to electronic reporting and record-keeping will affect third parties, for example State and local agencies that may collect and/or use the data in implementing EPA programs as well as members of the public who have an interest in the data as concerned citizens.*

Pennsylvania Comment:

Each of the potential participants in the eventual process should be included in the analysis phase. An active campaign to get buy in will make the eventual implementation easier

*Concerning our third goal, it is essential that we continue to ensure sufficient personal and corporate responsibility and accountability in the submission of electronic reports and the maintenance of electronic records; otherwise we place at risk the continuing viability of self-monitoring and self-reporting that provides the framework for compliance under most of our environmental programs. Therefore, EPA is especially interested in any concerns or issues that **commenters** may wish to raise about the effect that moving from paper to the electronic medium may have on this compliance structure--as well as assessments of the approaches EPA is proposing to address these concerns.*

Pennsylvania Comment:

There should be a close look at accountability and responsibility in the paper world. Any deficiencies in these based on a look at the reporting community should be addressed before the introduction of electronic tools. Over engineering should be avoided for the electronic tools that are selected.

C. Which Documents Could Be Filed Electronically?

*While EPA does plan to enhance CDX to accommodate CBI, we will first want to gain experience implementing CDX in the non-CBI arena and also take the time to explore CBI security issues with companies that submit confidential data. EPA seeks **comments** and advice on priorities for electronic reporting implementation. EPA also seeks **comments** on this proposal's global approach, and whether specific exclusions should be added to the rule.*

Pennsylvania Comment:

Each process involved in CDX should undergo sufficient analysis to arrive at an acceptable security level. Those with the most stringent requirements should be deferred until CDX has demonstrated its basic capabilities.

Specific exceptions will arise from the analysis performed. Additionally, some exclusions established for the immediate document may become possibilities with changes to infrastructure and automated tools. Language should be included to indicate that the exclusions will be revisited periodically.

E. How Would Today's Proposal Implement Electronic Reporting and Record-Keeping?

*EPA seeks **comments** on whether the new Part 3 should include specific cross-references to such announcements and instructions to the extent that these are codified elsewhere in Title 40. The cross references could be organized by CFR subparts of Title 40, and could provide a simple listing of program-specific regulations for which EPA has implemented electronic reporting or record-keeping under the provisions of today's proposal. EPA invites suggestions on the most helpful cross-referencing scheme.*

Pennsylvania Comment:

A cross reference would be helpful.

IV. The Requirements in Today's Proposal

A. What Are the Proposed Requirements for Electronic Reporting to EPA?

First, electronic documents must be submitted to an appropriate EPA electronic document receiving system; generally this will be EPA's Central Data Exchange (CDX), although EPA can also designate additional systems for the receipt of electronic documents.

Second, where an electronic document must bear a signature under existing regulations or guidance, it must be signed (by the person authorized to sign under the current applicable provision) with an electronic signature that can be validated using the appropriate EPA electronic document receiving system. The proposal stipulates that the electronic signature will make the person who signs the document responsible, or bound, or obligated to the same extent as he or she would be signing the corresponding paper document by hand. Only electronic submissions that meet these two requirements will be recognized as satisfying a federal environmental reporting requirement, although failure to satisfy these requirements will not preclude EPA from bringing an enforcement action based on the submission.

Pennsylvania Comment:

Neither requirement is overly demanding. Specific guidance about addressing, formats, etc. will be needed when the reporting is implemented.

Failure to meet these requirements, however, is likely to prevent the use of the submissions in enforcement actions. Courts are likely to treat these requirements as the minimum procedures needed to assure reliable electronic transmissions.

*Beyond these two requirements, the proposed rule does not specify any required hardware or software. Accordingly, the proposed rule text does not include any detail about CDX per se or about what will be required of regulated entities who wish to use it. Nonetheless, in publishing today's proposal, one of EPA's goals is to share our plans for the CDX and to invite **comments** on the technical approaches that it represents.*

Pennsylvania Comment:

Staying neutral in terms of technology is wise. Wording indicating the preference for open, commercially available tools may assist in the future in preventing a proprietary solution.

*We also seek **comment** on the more general question of whether it is in the best interests of EPA and our regulated entities to codify these public notice provisions at all, or whether they may place at risk our ability to be sufficiently responsive to the changing needs of our user community. We are also interested in the question of whether the different kinds of cases are or can be defined with sufficient precision to form the basis for workable regulatory provisions, and we welcome any suggestions for alternative regulatory language.*

Pennsylvania Comment:

Include any potential system impact in any proposed changes to regulations, including a time frame for system support for the change.

B. What Requirements Must Electronically Maintained Records Satisfy?

*EPA seeks **comment** on whether these criteria are appropriate and whether--taken together with the general criteria--they are sufficient to ensure that signatures associated with records fulfill their purpose. EPA also seeks **comment** on whether these criteria are appropriate for the maintenance of electronic records containing digital signatures. (For an explanation of digital signatures, and their role in CDX, see Section V.B.1 of this preamble.)*

Pennsylvania Comment:

Special attention should be paid to avoid getting locked into a specific technology. Commitment of a record to archival storage (including metadata and signature), be it magnetic or optical, may preclude it from being retrieved as technology changes. However, a system with stringent procedures that certifies the fulfillment of all criteria and then places a human readable version of the document on a long term storage medium would fulfill these requirements. Robust indexing of the long-term records would fulfill the retrieval requirement. Insistence that all copies remain electronic may delay compliance since no electronic media have existed long enough to guarantee compliance with a long term retention schedule.

* * *

*The special issues involved in maintaining digitally signed records are discussed in Section IV.D.6 of this preamble--in connection with archiving requirements for electronic document receiving systems--and EPA is interested in views on whether these issues need to be more explicitly addressed by the criteria for electronic record-retention systems discussed here, especially the criterion provided in Sec. 3.100(5), which addresses the maintenance of the electronic signature as a part of the electronic record. EPA seeks **comment** on whether this provision should be expanded to accommodate some of possible procedures for archiving digital signatures referred to at the end of Section IV.D.6.*

Pennsylvania Comment:

The archiving of a digital signature needs to be more carefully defined. In actuality, an electronic signature is generated via a hashing function and attached to a submitted document. It is not the same as a pen and ink or facsimile signatures. These are images created by the actual hand written signature of an individual; an electronic signature is based on cryptographic methods to authenticate originators. It will not be possible, consequently, to store an electronic signature as an eye readable image.

Linking an electronic signature to the transmitted document, moreover, is a technology specific requirement. Only PKI meets the standard.

*4. The Relation of These Requirements to Food and Drug Administration (FDA) Criteria. The criteria set forth in today's proposed rule--both the general and those specific to records with associated signatures--are intended to be consistent with criteria set forth for electronic document systems in other relevant regulations, such as FDA's criteria in 21 CFR part 11. EPA seeks **comment** on whether today's proposed requirements achieve this consistency, and whether this consistency is an appropriate goal for this rulemaking.*

Pennsylvania Comment:

FDA definition of electronic signature is broader than the proposed regulation:

(7) Electronic signature means a computer data compilation of any symbol or series of symbols executed, adopted, or authorized by an individual to be the legally binding equivalent of the individual's handwritten signature.

The broader definition allows a greater variety of methods for creating an electronic signature. EPA may also wish to include a definition of biometrics or incorporate it into its Electronic signature device definition.

*5. Storage Media Issues. Given the fast-paced evolution of technology, it is realistic to expect that electronic records will be transferred from one media format to another during the required period of record retention. While EPA allows for such transfers in today's propose rule, any such transfer must occur in a fashion that ensures that the entire electronic record is preserved without modification. As noted earlier, the electronic record will include not only the electronic document itself, but also the required information regarding time of receipt, date of receipt, etc. Any method of migrating electronic records from one electronic storage medium to another that fails to meet this criterion will not produce records that meet federal environmental record-retention requirements. For example, a CD-ROM version of a record originally stored on electromagnetic tape will not satisfy federal record-keeping requirements unless the method for transferring the record from one medium to the other employs error-checking software to ensure that the data is completely and faithfully transcribed. EPA seeks **comment** on whether this criterion is sufficient to ensure that the integrity and authenticity of the electronic record is maintained throughout its required record retention period.*

Pennsylvania Comment:

Over time, new storage formats and version of formats arise. These may or may not be backward compatible, possibly making earlier version unreadable. This has to be taken into consideration.

Additionally, an archiving method has to be established that is proven to last through the required retention period. At this time, neither magnetic nor optical storage is proven to last more than ten years. Pennsylvania has done research on the use of Microfilm as a long-term medium for storage.

D. What Criteria Are EPA Proposing That State Electronic Report Receiving Systems Must Satisfy?

*EPA invites **comment** on the exclusion of these criteria in cases where systems will not receive signed documents or documents used in litigation or enforcement and criminal proceedings.*

Pennsylvania Comment:

A scaled approach is well advised, using appropriate criteria for the specific situation.

*EPA invites **comment** on whether it would be worth developing the alternative set of criteria for systems that exclude electronic signatures.*

Pennsylvania Comment:

A specific second set would help to eliminate ambiguity between documents with signature and documents without signatures.

General System-Security Requirements. Proposed section 3.2000(a) requires every system used to receive electronic documents to

- (1) have robust protections against unauthorized access to the system;
- (2) have robust protections against the unauthorized use of any electronic signature on documents received;
- (3) provide for the detection of unauthorized access or attempted access to the system and unauthorized use or attempted use of any electronic signature on documents received;
- (4) provide safeguards to prevent the modification of an electronic report once an electronic signature has been affixed;
- (5) ensure that every electronic record is protected from modification or deletion;
- (6) provide safeguards to ensure that the system clock is accurate and protected from tampering or other compromise; and
- (7) provide safeguards to prevent any other corruption or compromise of the system.

We believe each of the seven proposed requirements is important to maintain the overall security of an electronic document receiving system. *We seek **comment** on whether--taken together--they are sufficient to ensure that the system can maintain the integrity and authenticity of the electronic documents it receives and maintains.*

Pennsylvania Comment:

These criteria, taken together, appear to fulfill the need. Specific determination of "robust" will need to be done in the system design phase.

Electronic Signature Method. To support the goals articulated under proposed section 3.2000(b)

as the "Validity of Data" criterion, proposed section 3.2000(c) stipulates that an electronic document receiving system must validate only those electronic signatures that are created by a method that

- (1) Involves a registration process that identifies the bearer of an electronic signature;
- (2) includes all elements of an adequate signature/certification scenario (described in paragraph 4, below);
- (3) provides safeguards to prevent excise, modification, or appropriation of an affixed electronic signature;
- (4) provides safeguards to prevent use of an electronic signature by anyone other than the individual to whom it has been issued; and
- (5) ensures that it is impossible to modify an electronic document without detection once the electronic signature has been affixed. This last proposed requirement is sometimes expressed by saying that the signature must be "bound" to the contents of the report. We seek **comment** on whether these conditions are appropriate, and whether--taken together--they suffice to ensure that electronic signatures affixed to electronic documents will have the same or better evidentiary value as handwritten signatures on paper documents for purposes of prosecuting an environmental crime or civil violation.

Pennsylvania Comment:

Criteria (3) and (5) can only be met by PKI. They are not technology neutral.

EPA seeks **comment** on all of these proposed registration agreement and renewal statement provisions, including the proposed provision for administrative determination of the frequency and terms of the renewal agreements. Given the purpose of these agreements and renewal statements, EPA is particularly interested in **comment** on whether all of them are necessary, particularly considering requirements for the on-screen certification described under Electronic Signature/Certification, in the next section of this preamble (Section IV.D.4). To the extent that all these agreements and renewals are necessary, EPA also seeks comment on whether the specific language suggested for each provision is adequate or necessary. It should be noted that EPA is currently not proposing to codify the specific language for these certifications and statements in the rule, and EPA seeks **comments** on the question of codification. It should also be noted that the proposed rule specifies that the signature agreement be signed on paper or in other media that EPA may designate. While EPA will initially require signature agreements to be signed on paper--and the Administrator may initially require this of renewals as well--EPA has the flexibility to allow electronic signatures in the future, as circumstances may warrant, and when EPA believes that electronic signatures can effectively substitute for hand-written signatures on paper for these electronic signature agreements and renewals. EPA seeks **comment** on whether any or all of these agreements and statements should be signed on paper.

Pennsylvania Comment:

These signature agreements are overly elaborate and may create more difficulties than they solve. A simple obligation to notify the state agency immediately upon discovery that the electronic signature has been compromised, should suffice. Most states have adopted the Uniform Electronic Transactions Act, which makes the submitter bound by the electronic signature. Further agreements are unnecessary and may cloud an otherwise clear legal obligation.

The maintenance of hand signed documents may introduce an unexpected administrative burden, including the tracking and storage of the documents and the ability to handle the documents electronically.

*EPA also seeks **comment** on a possible additional certification statement, required to be signed when a signature holder surrenders the signature for whatever reason--e.g., change of jobs or retirement--although this requirement is not included as a provision in today's proposal.*

Pennsylvania Comment:

Use of a certificate revocation list will eliminate the need to follow the person specifically. The elimination of access for a person on behalf of a specific corporation can be handled in the registration process for the system. Surrender of the certificate may be unnecessary.

4. Electronic Signature/Certification Scenario. In order for electronic document receiving systems to provide the same functionality as existing paper-based systems, the act of affixing an electronic signature to an electronic document must have the same meaning and legal effect as signing a paper document. In some instances, a signature indicates an intent to be bound to the commitments made in a document and constitutes an assertion that contents of the document are both truthful and accurate. In order to ensure that an electronic signature has the same meaning as its handwritten, paper counterpart, proposed section 3.2000(e) would require that an electronic document receiving system validate only those electronic signatures that are generated or affixed to an electronic document using a "signature/certification scenario" that ensures that the signatory understands and intends the legal consequence of affixing an electronic signature to an electronic document. This feature of an electronic document receiving system is important to ensure that each signed electronic document it receives can be used in civil and criminal enforcement, including cases against the holder of the electronic signature as signer of the electronic document.

Pennsylvania Comment:

There are a variety of methods for establishing the Intent of the submitter. Procedures, warnings, and course of business, are as effective as agreements.

*EPA seeks **comment** on whether the number and type of responses from the electronic document receiving system adequately address the issue of spurious or compromised submissions. Specifically, we seek **comment** on the requirements placed on the automatic acknowledgments.*

Pennsylvania Comment:

An assessment of impact on system performance for the acknowledgments should be made.

*EPA seeks **comment** on whether this transaction record specification is sufficiently robust to provide for "chain of custody".*

Pennsylvania Comment:

Documenting the routing of the document may be impossible and is about as useful as tracking the routing of a telephone call. The routing is immaterial; what is important is the acknowledgement of the received transmission. The transaction record is sufficiently robust if it is created automatically with sufficient detail to recreate the transaction.

*EPA seeks **comments** on these archiving criteria, and especially on whether there are any issues raised by the need to maintain the copy of record--which includes electronic signatures--over long periods of time.*

Pennsylvania Comment:

Archiving every screen and prompt creates a huge record that will be difficult to index and

retrieve. Archiving the transmitted document with the time and date of receipt and acknowledgement should suffice.

*EPA seeks **comments** on these and related difficulties that may stand in the way of validating archived digital signatures, and we welcome any advice on how these might be overcome.*

Pennsylvania Comment:

These are all valid concerns. A preferable archiving system is to convert the transmitted document into eye readable form and to archive that eye readable form. If the submitter acknowledges the archived image, then that image will be admissible evidence for decades to come.

*If these difficulties cannot be overcome, or overcome only at great expense, then EPA would seek to revise Sec. 3.2000(g)(2), by specifying alternatives to maintenance of the original signature and its validation as archived that would still allow users to demonstrate both the validity of the signature and the integrity of the record as a true picture of the data as it was signed. A possible approach might involve an archivists' wet-ink-on-paper certification that the digital signature was valid at the time the record was placed in the archive, together with appropriate measures to preserve the record unchanged. On another approach, the archivist might digitally resign the document at certain intervals, adding appropriate certifications about the validity of the original (or previous) signature on the document. EPA also seeks **comment** on such alternative approaches.*

Pennsylvania Comment:

Interposing human actions into the process increases the chances of errors. Automatic procedures are more likely to be accepted by the courts.

E. What Are the Costs and Benefits Associated With Today's Proposal?

*EPA estimates that today's proposal could result in an average annual reduction in reporting and record-keeping costs for those information collections identified as potentially benefiting from offering an electronic reporting option. Based on this analysis, EPA estimates that CROMERRR could result in an average annual reduction in burden of \$52.3 million per year for those facilities reporting, \$1.2 million per year for EPA, and \$1.24 million for each of the 30 states that were assumed to implement programs over the eight years of the analysis. For details of this study, see the technical background document, Cross Media Electronic Reporting and Recordkeeping Rule Cost Benefit Analysis in the Docket for today's proposal. EPA requests **comment** on whether the underlying assumptions and the methods used in the cost benefit analysis provide a realistic estimate of the costs and benefits associated with electronic reporting and recordkeeping.*

Pennsylvania Comment:

Until the final costs for the new system are established, a calculation is difficult.

Proposed Rule

Subpart A – General Provisions

§ 3.2 Implementation

(c) Conditioning electronic reporting upon obtaining a program amendment, is both unnecessary and unworkable. Changes in testing methods do not require a program amendment, so the procedure for reporting the test results should not require one.

The process, moreover, is completely inappropriate for approving an electronic document receiving system. The details of a state agency's security system and archiving system are not matters for publication and public comment. To the contrary, security dictates that this information not be widely disseminated. Changes in an agency's security or archiving system, moreover, are likely to be frequent, as those technologies continue to evolve.

Requiring a program amendment for every change will be particularly burdensome for Pennsylvania, which has many delegated programs. When changes are made to the Central Data Exchange, by contrast, a much simpler process is proposed.

§ 3.3 Definitions

Electronic signature is defined as an electronic record that is “incorporated into (or appended to)” an electronic document. The Uniform Electronic Transaction Act, by contrast, defines it as “any symbol or process” intended to sign a document. EPA's proposed definition eliminates the use of a process to create an electronic signature. Clicking a button marked “Submit” would not suffice. The definition, consequently excludes many technologies, including the most common method for executing a signature electronically.

Subpart B – Electronic Reporting to EPA

§ 3.10 What are the requirements for acceptable electronic documents

The proposed regulation limits acceptable electronic documents to those bearing an electronic signature that is “created by a person who is authorized to sign the document, with an electronic signature device that this person is authorized to use.” The requirement describes a PKI process and other technologies will have great difficulty meeting it.

This requirement also creates two evidentiary issues: proving that the person is (1) authorized to sign the document and (2) authorized to use the device. Both issues are difficult to prove. More important, it prevents use of an adoptive admission theory for connecting the document to the individual and the operator. Most electronic transactions rely upon the adoptive admission theory, so this is a serious legal obstacle.

Subpart D – Electronic Reporting and Recordkeeping Under EPA-Approved State Programs

§ 3.1000 How are authorized state, tribal or local environmental programs modified to allow electronic reporting?

As discussed above, requiring a program amendment before a state can accept electronic documents for that program, is unnecessary, inappropriate and burdensome. Changes in testing methods do not require a program amendment, so the procedure for reporting the test results should not require one.

The process, moreover, is completely inappropriate for approving an electronic document

receiving system. The details of a state agency's security system and archiving system are not matters for publication and public comment. To the contrary, security dictates that this information not be widely disseminated. Changes in an agency's security or archiving system, moreover, are likely to be frequent, as those technologies continue to evolve.

Requiring a program amendment for every change will be particularly burdensome for Pennsylvania, which has many delegated programs. When changes are made to the Central Data Exchange, by contrast, a much simpler process is proposed.

The proposal is also inconsistent with recent ECOS discussions. The consensus was that trading partner agreements would be the appropriate mechanism for approving electronic reporting systems.

§ 3.2000 What are the criteria for acceptable electronic document receiving systems?

- (a) *General system security*: These are the general standards that are appropriate for evaluating an electronic document receiving system. They can be met by a variety of technologies, processes, and procedures
- (b) *Validity of data*: Under the proposed regulation, the system must generate data establishing that the electronic document was not altered during transmission or after receipt, was sent intentionally and only by the authorized person. It is unlikely that any system can establish that the electronic document "was not altered in transmission or at any time after receipt." Even under PKI, a document is encrypted, transmitted, and de-encrypted, meaning that it is changed at least twice during the process. More important, there is no need identify the document sent with that received, as long as the submitter acknowledges the version that has been received. For example, if an EDI document is transmitted, it would be more valuable to have the submitter review and acknowledge the tables generated by that transmission, than to preserve the largely unintelligible string of numbers and letters actually transmitted. From an evidentiary perspective, it is easier to demonstrate the integrity of the document received, than it is to preserve evidence of the transmission process. A system that converts the transmitted document into the format that is permanently archived, is easy to defend as long as the archived format has been acknowledged by the submitter. The acknowledged document becomes an adoptive admission that can be used in any court proceeding. It is unlikely, moreover, that the archived format will be the transmitted format. The TIFF format appears to be the best for archiving onto microfilm, but few transmissions will be in TIFF format.
- (c) *Electronic signature method*: Under the proposed regulation, the signature must be attached to the electronic document in a way that prevents copying of the signature or altering of the document without detection. Very few technologies can meet this standard and there is no known method for archiving documents in this manner for more than five years. In addition, it prevents reformatting of the document, thereby creating all the problems discussed in subsection (b), above.
- (d) *Submitter registration process*: By combining the registration process with the process for obtaining an electronic signature device, the proposed regulation forces consultants to obtain a separate electronic signature device for each client represented. This would be an unnecessarily cumbersome and expensive process. If the registration process is separate from the process for obtaining an electronic signature device, then the consultant can register for multiple clients and use a single signature device.
- (e) *Electronic signature/certification scenario*: The proposed regulation describes a system for acknowledging the receipt of a transmitted document, but appears to envision that this process will occur *before* the document is transmitted. As discussed above, a system that acknowledges the validity of a received document is far preferable to one that focuses on the transmission process. The proposed regulation needs to be rewritten to clarify that it refers to received documents, rather than those that have not yet been transmitted.

- (f) *Transaction Record*: Tracking the routing of an electronic report may not be possible. A PKI document, for example, is often divided into packets that are routed separately and assembled at the end of the process. The information, moreover, is no more useful than knowing whether a telephone call traveled by satellite or by underground cable. The transaction record should focus on what is received, not on how the message is transmitted. Recording every screen viewed by the submitter is also misdirected. Once the final submission is acknowledged, prior drafts and instructions are useful only for impeaching the acknowledged document. In addition to being counterproductive, the requirement results in a multifold increase in the amount of information to be archived.
- (g) *System archives*: Archiving the on-screen prompts and screens for each document submitted will create a large file for every document. As the size of the file increases, the ability to index, store, and retrieve it decreases. The large amounts of information required for each document will quickly overwhelm any archiving system.

§ 3.3000 How are authorized State, tribal or local environmental programs modified to allow electronic recordkeeping?

Conditioning electronic reporting upon obtaining a program amendment, is both unnecessary and unworkable. Changes in testing methods do not require a program amendment, so the procedure for reporting the test results should not require one.

The process, moreover, is completely inappropriate for approving an electronic document receiving system. The details of a state agency's security system and archiving system are not matters for publication and public comment. To the contrary, security dictates that this information not be widely disseminated. Changes in an agency's security or archiving system, moreover, are likely to be frequent, as those technologies continue to evolve.

Requiring a program amendment for every change will be particularly burdensome for Pennsylvania, which has many delegated programs. When changes are made to the Central Data Exchange, by contrast, a much simpler process is proposed.